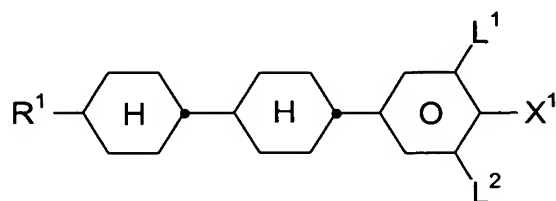
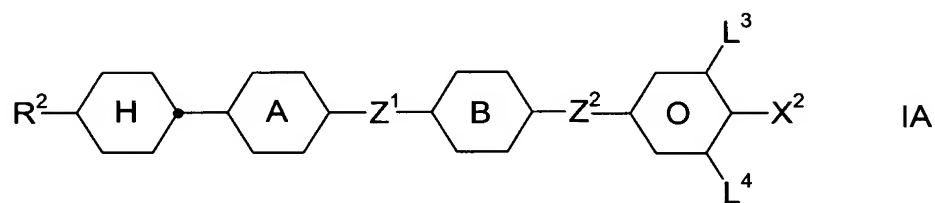


Patent claims

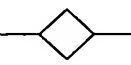
1. Liquid-crystalline medium based on a mixture of polar compounds of positive dielectric anisotropy, characterised in that it comprises one or more compounds of the formula I



and one or more compounds of the formula IA




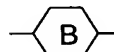
in which the individual radicals have the following meanings:

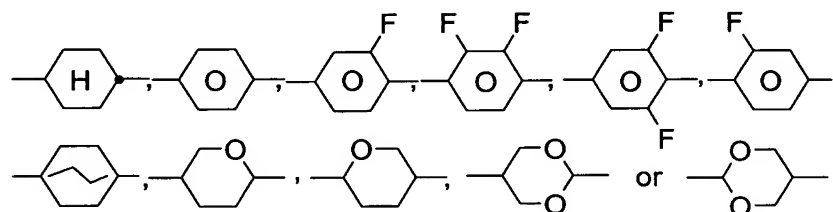
R^1 and R^2 are each, independently of one another, H, a halogenated or unsubstituted alkyl radical having from 1 to 15 carbon atoms, where one or more CH_2 groups in these radicals may also be replaced, in each case independently of one another, by $-C\equiv C-$, $-CH=CH-$, $-O-$, , $-CO-O-$ or $-O-CO-$ in such a way that O atoms are not linked directly to one another,

X^1 is in each case, independently of one another, CN, SF_5 , SCN, NCS, OCN, a halogenated alkyl radical, a halogenated alkenyl radical, a halogenated alkoxy radical or a halogenated alkenyloxy radical, each having up to 6 carbon atoms,

X^2 is in each case, independently of one another, F, Cl, CN, SF_5 , SCN, OCN, NCS, a halogenated alkyl radical, a halogenated alkenyl radical, a halogenated alkoxy radical or a halogenated alkenyloxy radical, each having up to 6 carbon atoms,

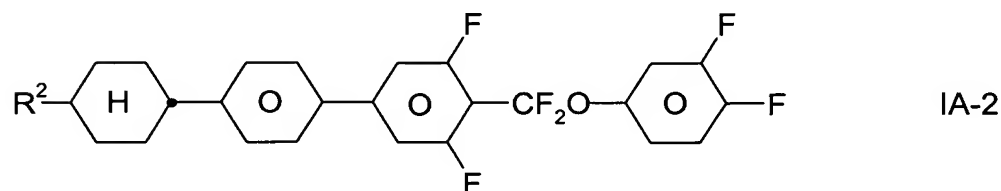
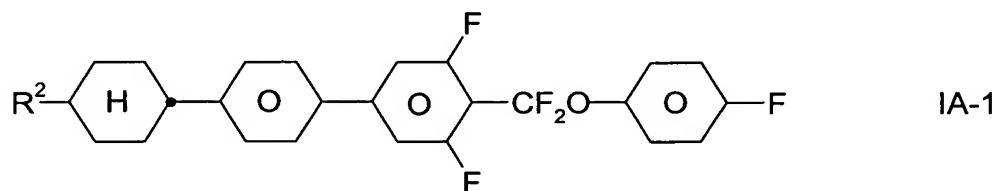
Z^1 and Z^2 are each, independently of one another, $-CF_2O-$, $-OCF_2-$, or a single bond, where $Z^1 \neq Z^2$,

 and  are each, independently of one another,

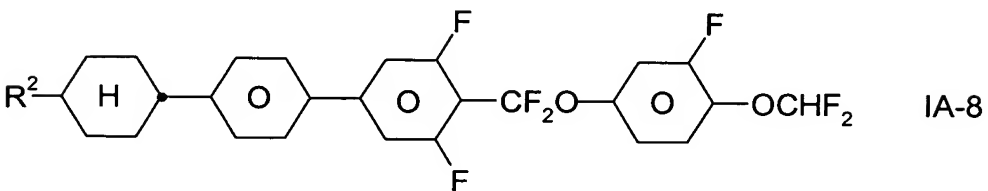
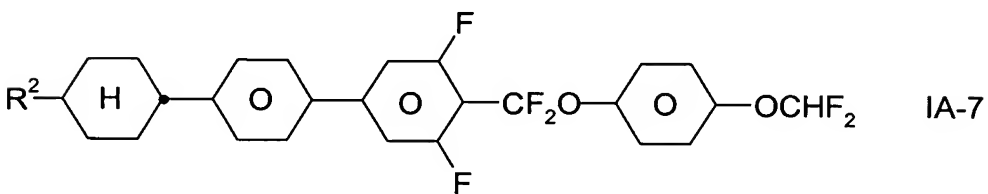
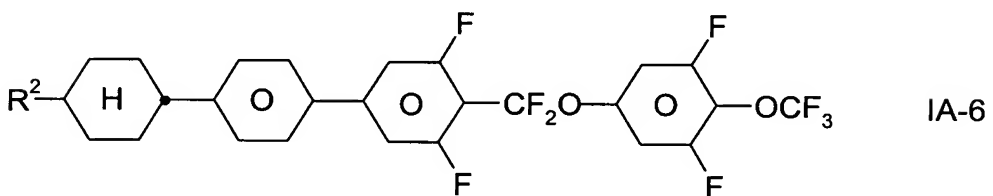
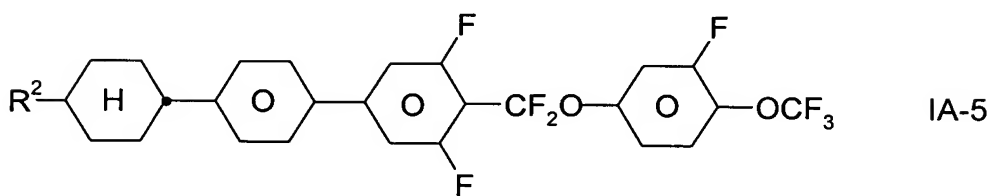
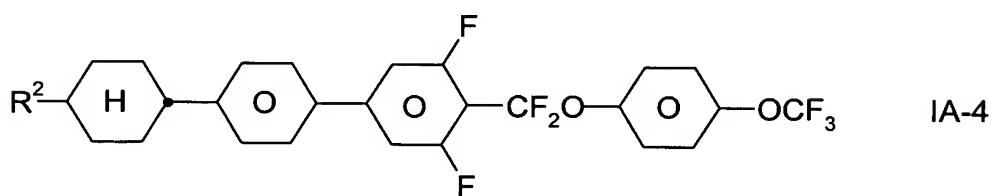
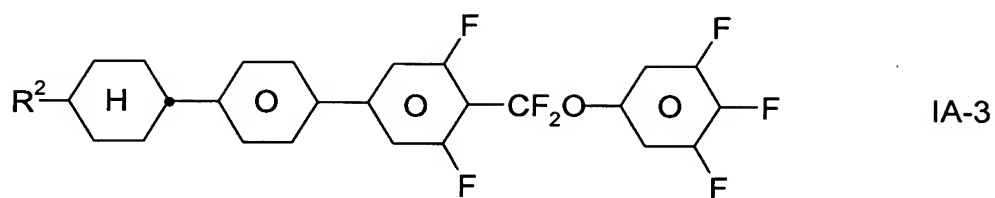


L^{1-4} are each, independently of one another, H or F.

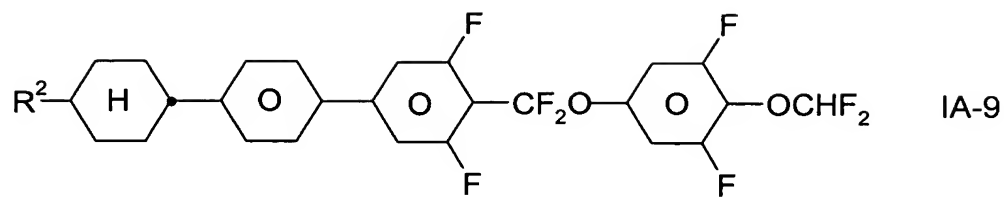
2. Liquid-crystalline medium according to Claim 1, characterised in that it comprises one, two or more compounds of the formulae IA1-IA24:



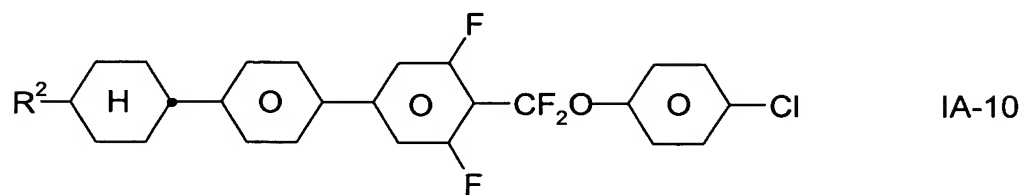
- 61 -



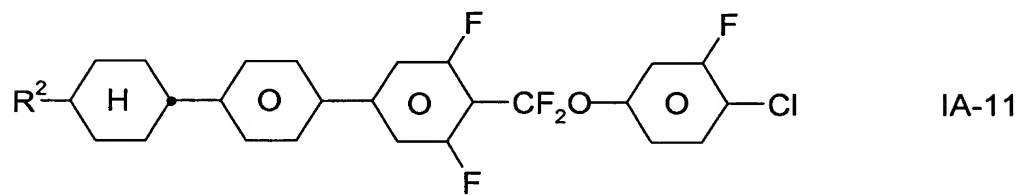
- 62 -



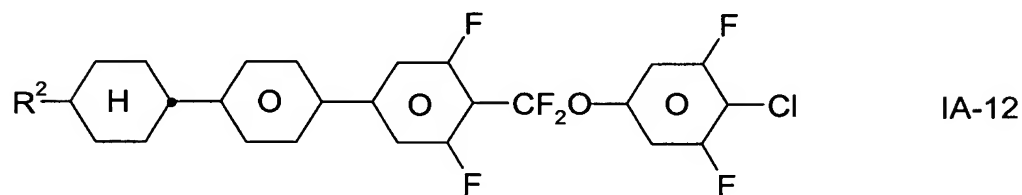
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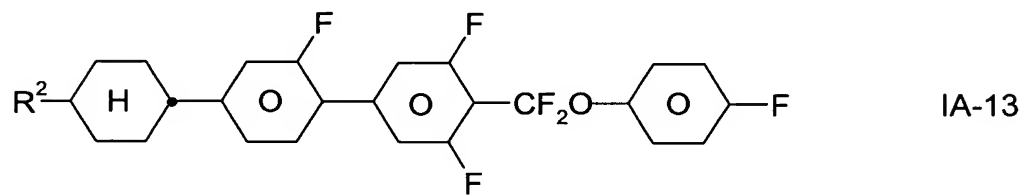
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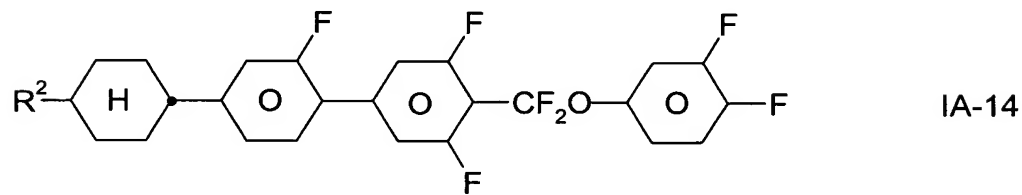
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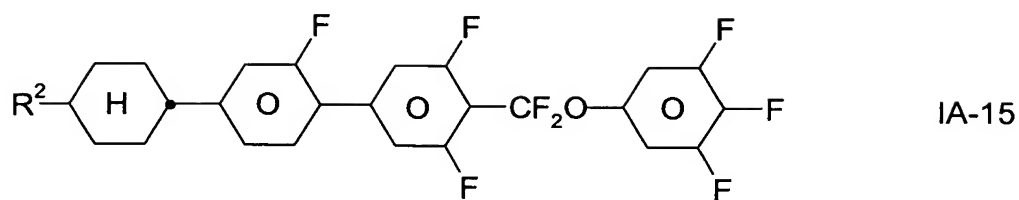
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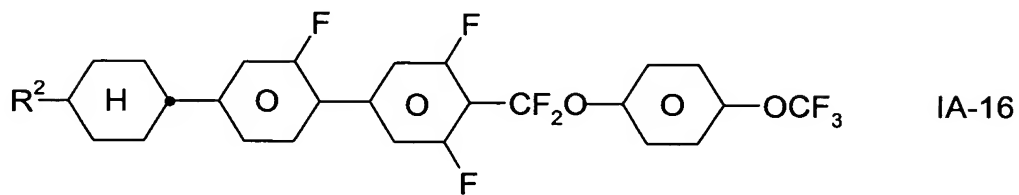
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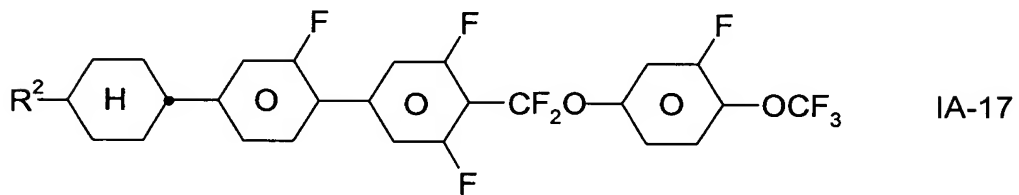
- 63 -



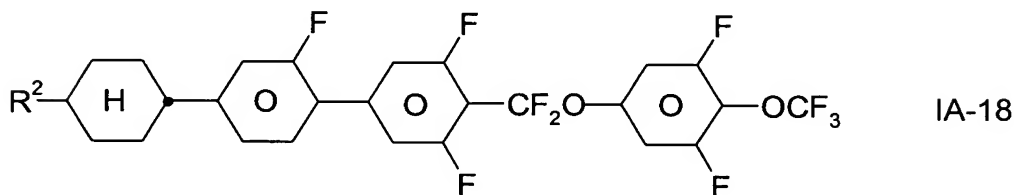
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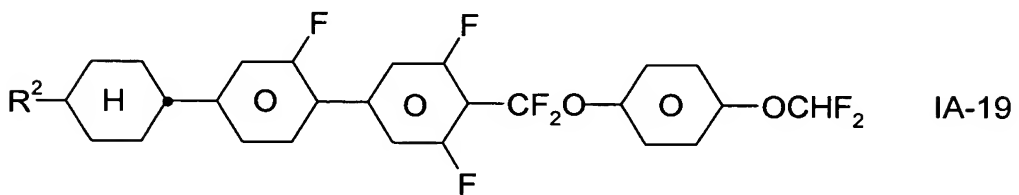
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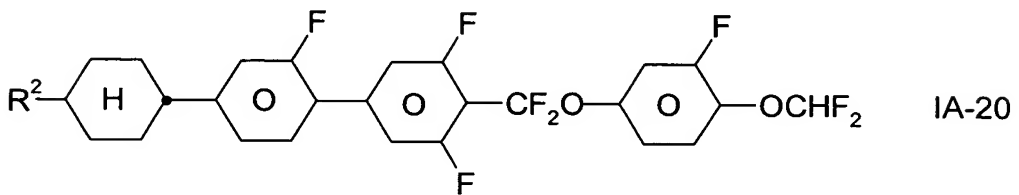
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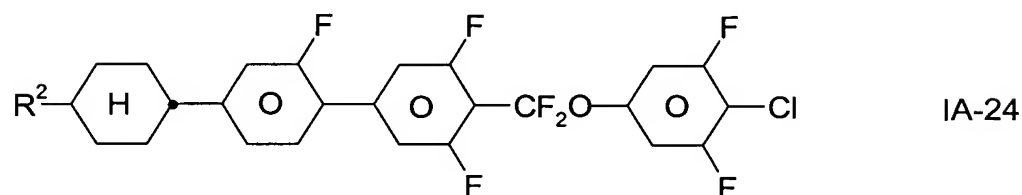
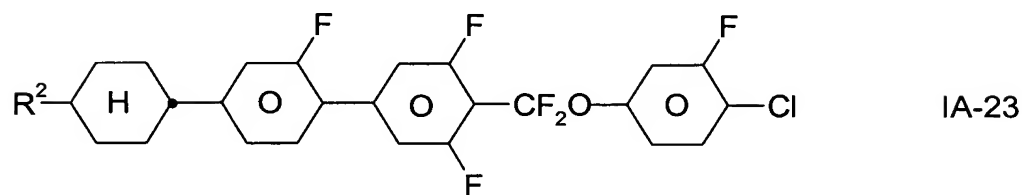
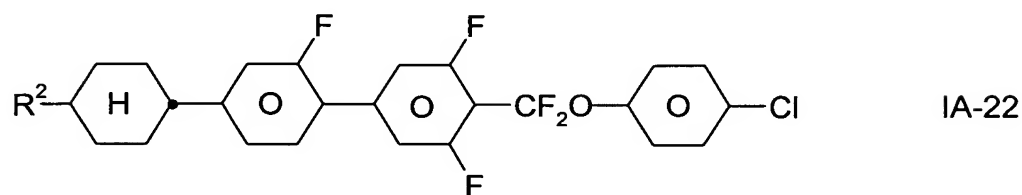
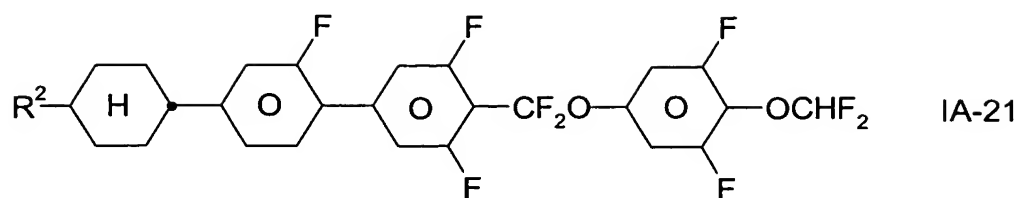
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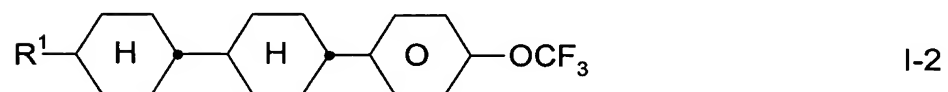
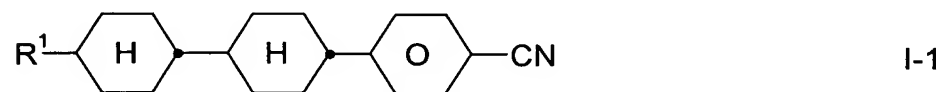
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- 64 -

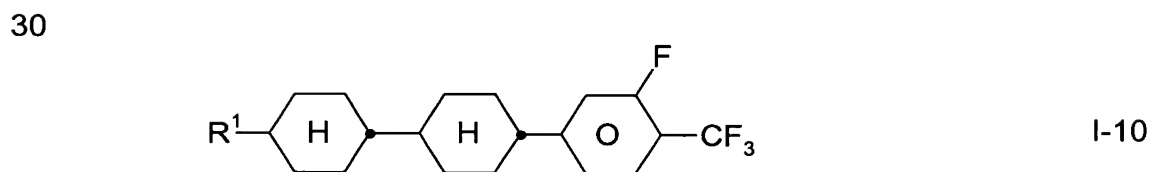
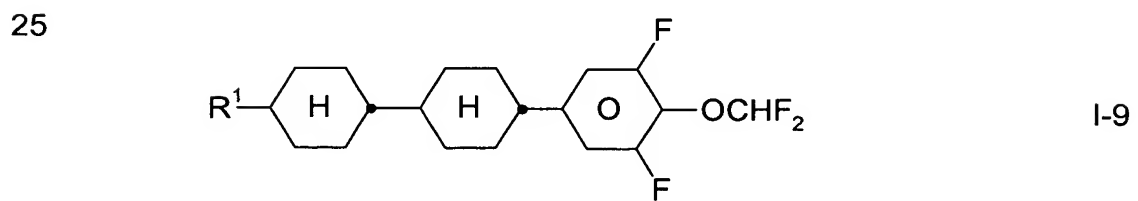
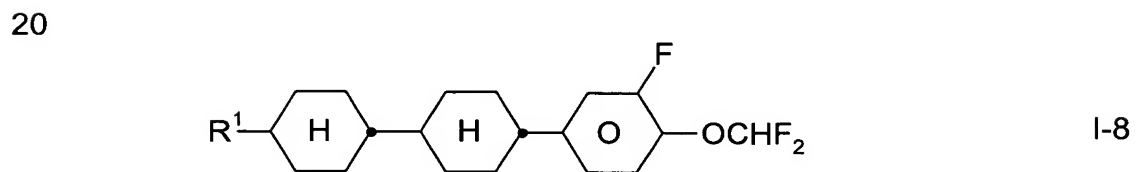
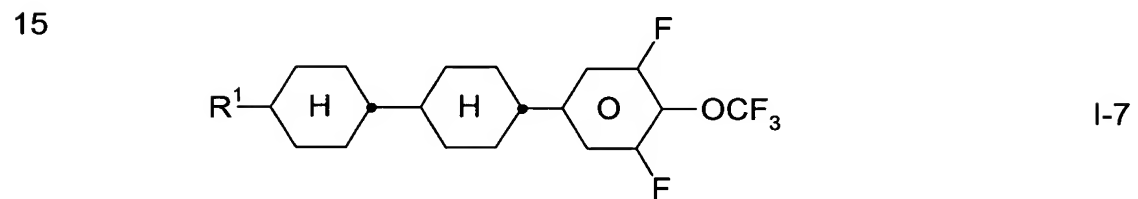
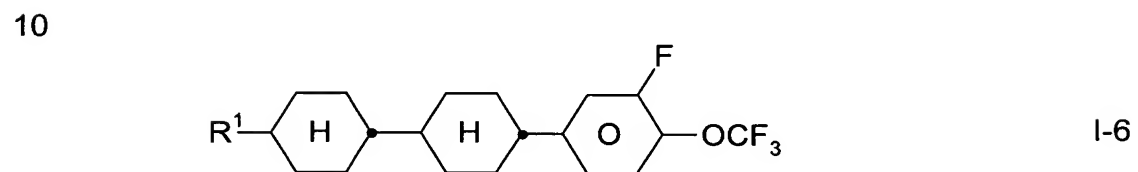
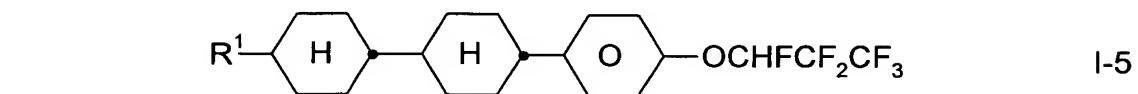
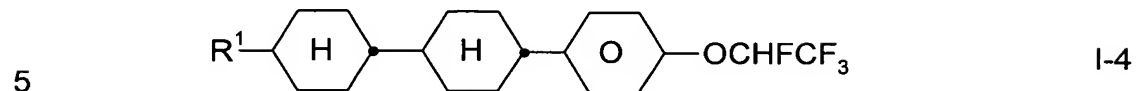
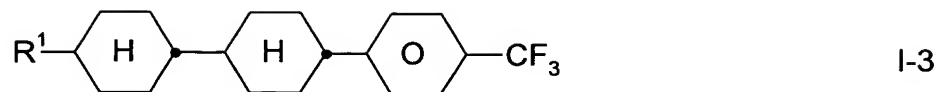


in which R^2 is as defined in Claim 1.

3. Liquid-crystalline medium according to Claim 1, characterised in that it comprises one or more compounds of the formulae I-1 to I-15

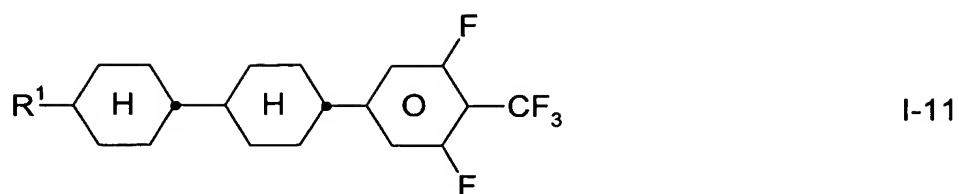


- 65 -

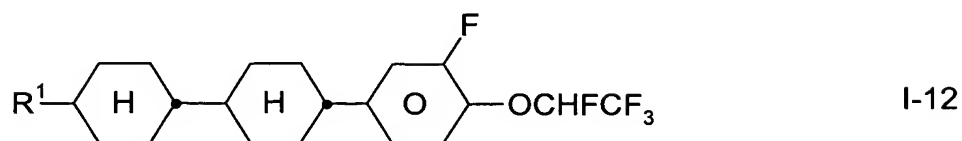


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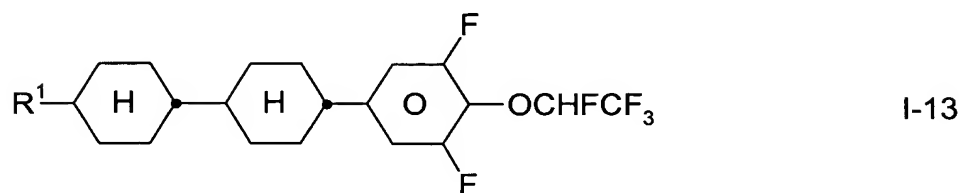
- 66 -



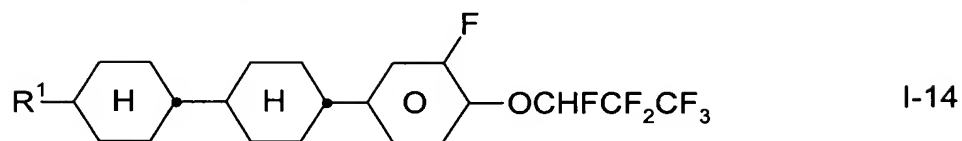
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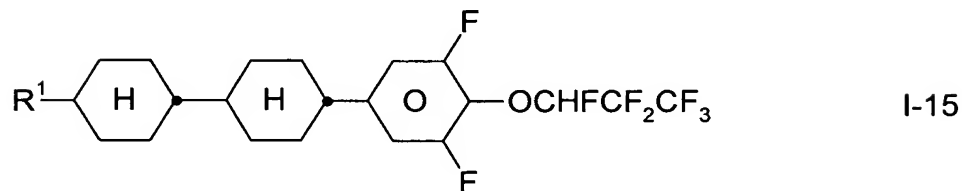
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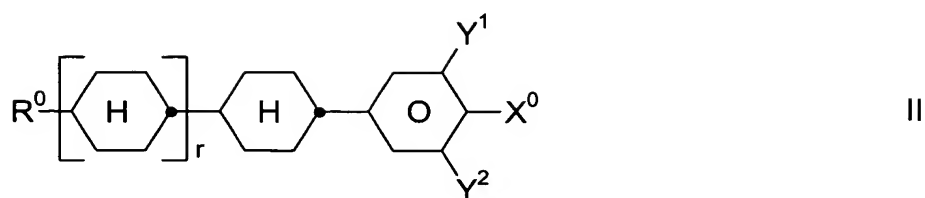
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in which R¹ is as defined in Claim 1.

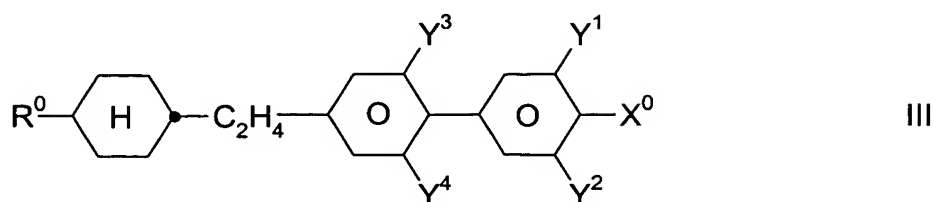
4. Liquid-crystalline medium according to one of Claims 1 to 3, characterised in that it additionally comprises one or more compounds selected from the group consisting of the general formulae II, III, IV, V and VI:

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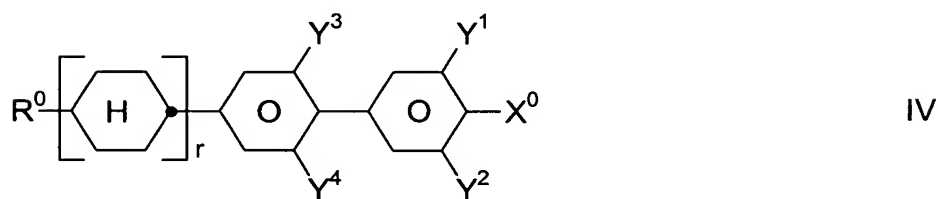
- 67 -



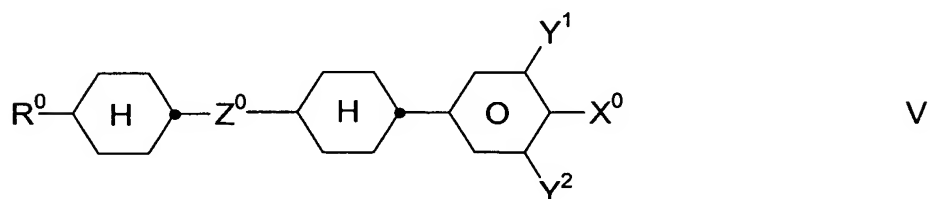
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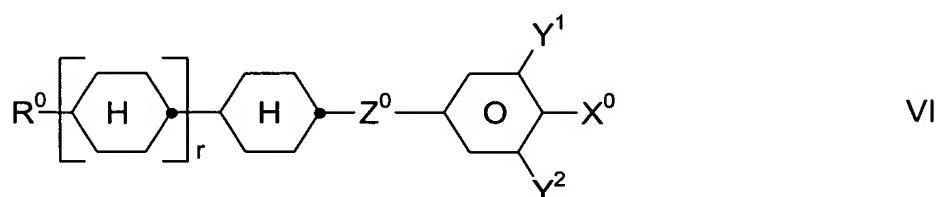
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in which the individual radicals have the following meanings:

R^0 is H, n-alkyl, alkoxy, oxaalkyl, fluoroalkyl or alkenyl, each having up to 9 carbon atoms,

30

X^0 is F, Cl, halogenated alkyl, alkenyl or alkoxy having up to 6 carbon atoms,

35

Z^0 is $-\text{C}_2\text{F}_4-$, $-\text{CF}=\text{CF}-$, $-\text{CH}=\text{CF}-$, $-\text{CF}=\text{CH}-$, $-\text{C}_2\text{H}_4-$, $-(\text{CH}_2)_4-$, $-\text{CF}_2\text{O}-$, $-\text{OCF}_2-$, $-\text{OCH}_2-$ or $-\text{CH}_2\text{O}-$,

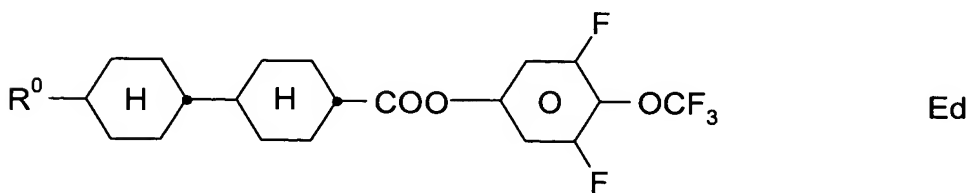
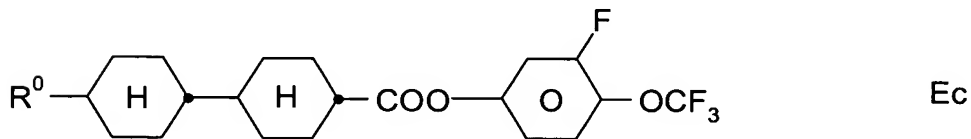
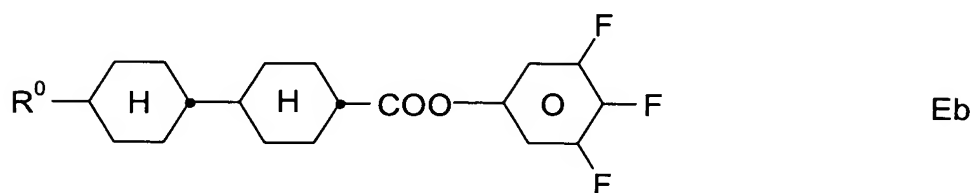
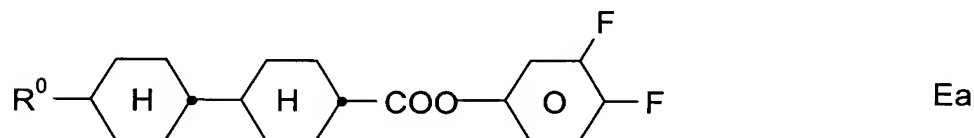
Y^1 and Y^2 are each, independently of one another, H or F,

r is 0 or 1,

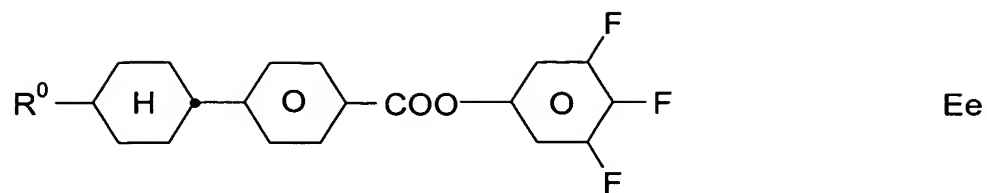
5 and the compound is not identical with the compound of the formula I.

10 5. Liquid-crystalline medium according to Claim 4, characterised in that the proportion of compounds of the formulae IA and I to VI together in the mixture as a whole is at least 50% by weight.

15 6. Liquid-crystalline medium according to one of Claims 1 to 5, characterised in that it additionally comprises one or more compounds of the formulae Ea to Ee



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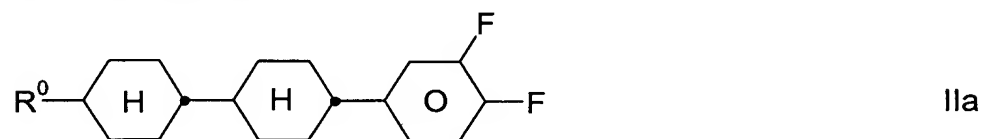


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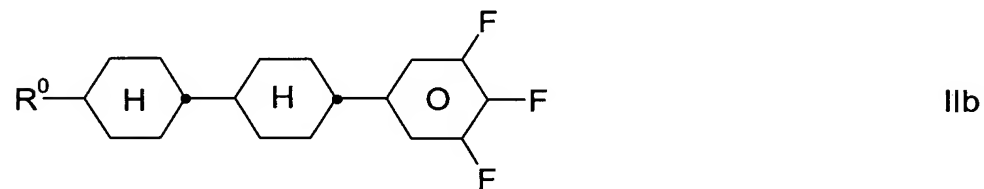
in which R⁰ is as defined in Claim 4.

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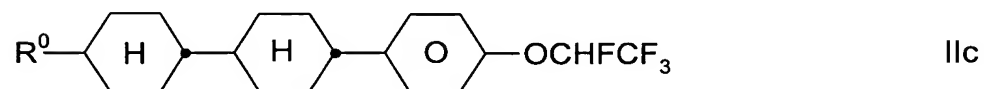
7. Liquid-crystalline medium according to one of Claims 1 to 6, characterised in that it comprises one or more compounds of the formulae IIa to IIg



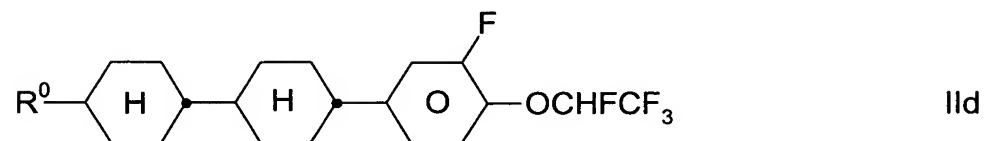
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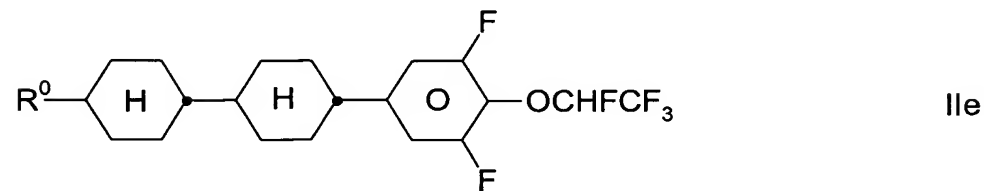
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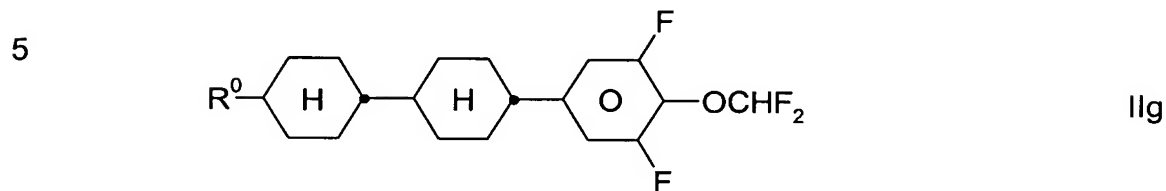
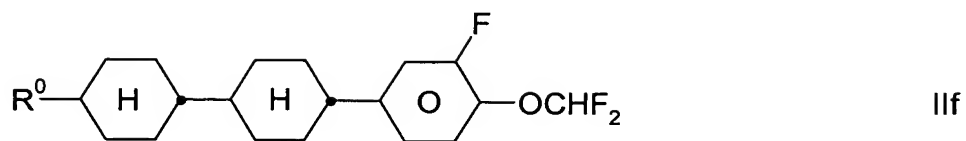


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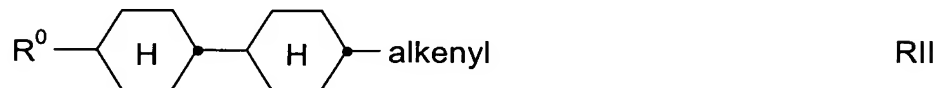
in which R^0 is as defined in Claim 4.

8. Liquid-crystalline medium according to one of Claims 1 to 7, characterised in that it comprises one or more compounds of the following formulae:

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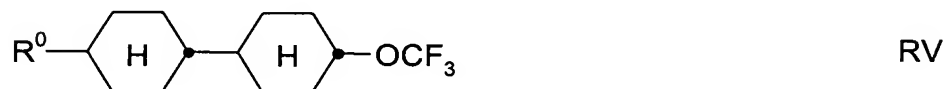
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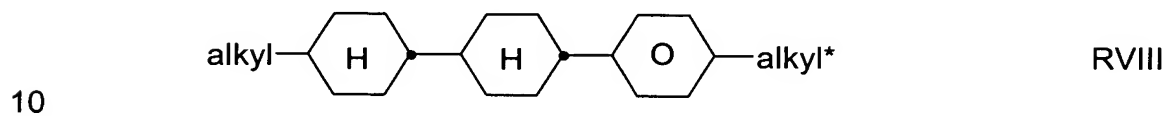
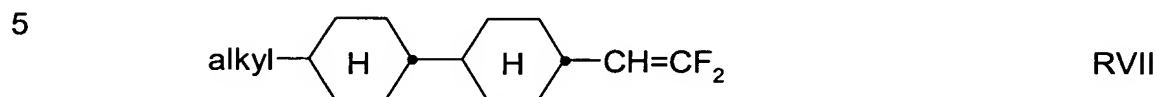
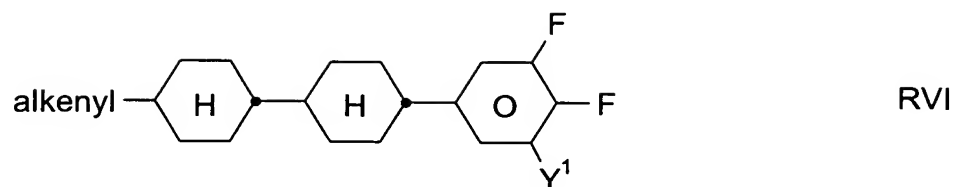


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15 in which

R⁰ is n-alkyl, alkoxy, oxaalkyl, fluoroalkyl, alkenyloxy or alkenyl, each having up to 9 carbon atoms,

20 Y¹ is H or F,

alkyl and alkyl* are each, independently of one another, a straight-chain or branched alkyl radical having 1-9 carbon atoms,

25 alkenyl and alkenyl* are each, independently of one another, a straight-chain or branched alkenyl radical having up to 9 carbon atoms.

30 9. Liquid-crystalline medium according to one of Claims 1 to 8, characterised in that the proportion of compounds of the formula IA in the mixture as a whole is from 5 to 40% by weight.

35 10. Use of the liquid-crystalline medium according to Claim 1 for electro-optical purposes.

11. Electro-optical liquid-crystal display containing a liquid-crystalline medium according to Claim 1.

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